

REMARKS

Claims 1-16 were presented for examination upon filing of the application. Claims 1-16 stand rejected per Office Action mailed March 19, 2004.

Independent claims 1 and 8 have been amended to combine the essence of the elements of claims 2 and 9, respectively, to more precisely state the inventive claim.

Rejections per Section 102(b)

There are reasons to traverse the rejection on the basis of the original claim, notwithstanding claim amendments of this paper. For the record, the original claim recites a plurality of samples, collectively referenced as a "stack", which stack resides in the guide, which latter is coaxial with the bore and one of the samples occupying the measurement space surrounded by the RF coil. Bartuska discloses a sample in the measuring space, but the rest of his samples are disposed outside the bore of the magnet.

The Examiner cites Bartuska for the disclosure therein that a cassette of samples (in horizontal translation above the bore of an NMR magnet) might be thermostated in order that when a sample is vertically translated to the analysis position, such sample would already be thermally prepared for analysis at the desired temperature. This disclosure is not unusual in view of the prior art already cited. In particular, the invention is distinct from these examples of prior art because an entire set of samples is maintained at a desired (usually elevated) temperature for an extended time period required for the analysis of the entire set of samples. It is evident that the last prior art sample of a set of samples to be analyzed is therefore subject to the effects of the desired temperature for a substantially longer period of time than the first sample to be analyzed. For samples subject to deterioration or modification from temperature dependence this introduces a significant source of systematic error. The invention minimizes the duration of thermal conditioning to which a sample is subject, and separately, the differences are minimized between individual samples of a set, due to different thermal exposure.

It is also an inventive aspect that the thermal conditioning of the sample(s) staged for analysis in the magnet bore is achieved with a gas circulating through the bore. While heated gas circulating through the bore is a known means of conditioning a sample already positioned in the sample space, the analysis is deferred until thermal equilibrium is reached. Consequently, the maintenance of a selected thermal condition for a sample during analysis is, for the present invention, combined with thermal preparation of the next sample to be analyzed. The independent claims 1 and 8 clearly address a plurality of samples within the magnet bore, consistent with this aspect of the invention. Claim 8 now expressly includes the substance of original claim 9. Claim 11 does not require amendment because this aspect of the invention is present in step (c) thereof.

Rejection per section 103(a)

The Examiner has combined the Bartuska reference with Smallcombe of record to support this rejection directed at claims 2-4, 6-7, 16, 9-10, and 12-15. The salient aspect of this class of rejection is the in-bore heating of Smallcombe.

The Smallcombe reference is immediately distinguishable through recognition that thermal conditioning of the sample in analysis position is all that is disclosed therein. There is no suggestion for accommodating another sample and providing thermal conditioning prior to analysis of that other sample, whereby the process of thermal equilibration of the other sample would be carried out concurrently with analysis and or thermal conditioning of the sample positioned for current analysis.

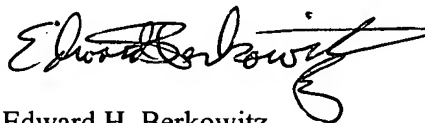
In addition to the above distinctions stated over the Bartuska reference, Applicant notes in passing that even in view of the Examiner's assertion that any known means of thermal conditioning of samples could be applied by those of skill in the art, the combination fails because the Bartuska reference would (by the Examiner's approach) perform thermal conditioning in the horizontally traversing cassette of samples while Bartuska's cushioning gas and sample-spinning gas in the bore would disturb the thermal equilibrium of these prior conditioned samples.

The claims rejected on this combination are dependent claims, claims 2 and 9 of which have been cancelled. It is urged that these claims are allowable for the reason of the allowability of the independent claims from which they depend. Dependent claim 17 has been added to elaborate the combination generalized limitations of prior claim 9 with claim 8.

Applicant acknowledges the Examiners comment regarding allowability of claim 5.

Applicant has amended claims in order to clearly distinguish over prior art. The claims are believed to be in condition for allowance, which action is respectfully solicited.

Respectfully submitted,



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